Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S29	113	S28 and @pd>"20050322"	US-PGPUB; USPAT; USOCR	OR	OFF	2005/07/08 13:50
S28	2605	(257/706,707,713,720).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2005/07/08 13:50
S25	150	S24 and @pd>"20041108"	US-PGPUB; USPAT; USOCR	OR	OFF	2005/07/08 13:50
S30	1054	(fusible same (nonfusible or (non adj fusible)))	US-PGPUB; USPAT; USOCR	OR	OFF	2005/07/08 13:52
S11	11	S10 and (heat adj sink)	US-PGPUB; USPAT; USOCR	OR	OFF	2005/07/08 13:52
S31	13	S30 and (heat adj sink)	US-PGPUB; USPAT; USOCR	OR	OFF	2005/07/08 14:06
S32	13	(("5,062,896") or ("4,869,954") or ("4,914,551") or ("4,612,601") or ("4,606,962") or ("6,365,973") or ("6.340,113") or ("6.059,952") or ("6,114,413") or ("6,365.973") or ("6,207,300") or ("5,213,715") or ("6,451,422") or ("4,711,813") or ("5,328,087") or ("5,290,904") or ("6365973") or ("5062896")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2005/07/08 14:08

Edit an existing query or compose a new query in the Search Query Display.

Select a search number (#) to:

- Add a query to the Search Query Display
- Combine search queries using AND, OR, or NOT
- Delete a search
- Run a search

Mon, 11 Jul 2005, 9:35:51 AM EST

Search Query Display

Run Search Reset

Recent Search Queries

#1 (heatsink<in>metadata)

#2 (heatsink<in>metadata) <and>(fusible<in>metadata)

#3 (heatsink<in>metadata)

#4 (((heatsink<in>metadata))<AND>(particle<in>metadata))

#5 (((heatsink<in>metadata))<AND>(particle<in>metadata))

Clear Session History

Jul 11 2005 at 09:25:45

Search: fusible particles AND heat sink

Search: fusible particles AND heatsink

Search: fusible particles

Display from COMPENDEX

ANSWER 1 © 2005 EEI on STN

Title

Novel interconnection method using electrically conductive paste with fusible filler.

Author

Kim, Jong-Min (Department of Manufacturing Science Graduate School of Engineering Osaka University, Osaka 565-0871, Japan); Yasuda, Kiyokazu; Fujimoto, Kozo

Publication Source

Journal of Electronic Materials v 34 n 5 May 2005 2005.p 600-604
CODEN: JECMA5 ISSN: 0361-5235

Publication Year

2005

Document Type

Journal

Treatment Code

Experimental

Language

English

Abstract

A new class of electrically conductive adhesives (EGAs) was developed using **fusible** filler **particles**. Differential scanning calorimetry (DSC) was used to examine the curing behavior of the base resin material and the melting behavior of the filler **particles**. The formation of the interconnection before and after the curing process was observed by means of a microfocus x-ray system. The cross-sectional morphology of the electrical conduction path was investigated by optical microscopy. It is believed that the wetting and coalescence behavior of the molten filler **particles** are the main driving forces leading to the production of the interconnection between the electrodes. In addition, the metallurgical connections both between the **particles** and between the **particles** and the copper substrate were observed using scanning electron microscopy and electron probe microanalysis (EPMA). 18 Refs.

Classification Code

803 Chemical Agents and Basic Industrial Chemicals; 801 Chemistry; 815.1.1 Organic Polymers; 802.3 Chemical Operations; 802.2 Chemical Reactions; 717.1 Optical Communication Systems

Controlled Indexing

*Fillers; Wetting; Coalescence; Electric conductivity; X rays; Electrodes; Scanning electron microscopy; Adhesion; Resins; Melting; Curing; Optical interconnects

Supplementary Indexing

Conductive path; Electrically conductive paste; Fluxless; Low-melting-point alloy

Accession Number

2005(25):3117 COMPENDEX

Display from COMPENDEX

ANSWER 16 © 2005 EEI on STN

Title

COMPOSITE SOLDERS.

Author

Anon

Publication Source

IBM Tech Discl Bull v 29 n 4 Sep 1986 p 1573-1574
CODEN: IBMTAA ISSN: 0018-8689

Publication Year

1986

Document Type

Journal

Treatment Code

Application

Language

English

Abstract

The present solders are composites of distinct **particles** together with **fusible** metals or alloys.High degrees of compositional freedom greatly increase the number of possible solders and mechanical properties of solders beyond that what can be obtained with metals or alloys alone.Consequently, the range of solder joint design is extended beyond that achievable with conventional **fusible** metal or alloy solders.It is often desirable to

design solders with higher ultimate stress (point at which material starts to neck and break) and with a hierarchy of melting points (e.g., 100 to 300 degree C) to be used for joining electronic components directly to pads on the surface of cards and/or boards.The composite solders have the design degrees of freedom needed for this surface attach application.The **particles** in a composite solder can be chosen such that they reinforce the solder joint.

Classification Code

538 Welding & Bonding; 536 Powder Metallurgy; 531 Metallurgy & Metallography; 714 Electronic Components; 715 General Electronic Equipment

Controlled Indexing

*SOLDERS:Performance; ELECTRONIC EQUIPMENT MANUFACTURE:Soldering

Supplementary Indexing

COMPOSITE SOLDERS; FUSIBLE METALS; SOLDER JOINT

Accession Number

1987(2):24085 COMPENDEX

Display from PASCAL

English Title

Isotropic conductive adhesives with **fusible** filler **particles**

Author

KIM Jong-Min; YASUDA Kiyokazu; FUJIMOTO Kozo

Organization

Department of Manufacturing Science, Graduate School of Engineering, Osaka University, Osaka 565-0871, Japan

Publication Source

Journal of electronic materials, (2004), 33(11), 1331-1337, 12 refs.
ISSN: 0361-5235 CODEN: JECMA5

Document Type

Journal

Bibliographic Level

Analytic

Country of Publication

United States

Language

English

Abstract

A new low–temperature assembly process using a new class of isotropic conductive adhesives (ICAs) with **fusible** filler **particles** was proposed to realize a low–temperature, fluxless and cost–effective, alternative, solder flip–chip interconnection technology. New ICA formulations were developed using two different resin materials and **fusible** filler **particles**. The curing behavior of the resin materials and the melting of the **fusible** filler were observed by differential scanning calorimetry (DSC). The coalescence and wetting states, the size distribution of the **fusible** fillers, and the formation of the conduction path in each ICA formulation were observed with a laser microscope. It was found that two different types of electrical conductive paths, necking type and bump type, were produced. The bump–type conductive path was more effective than that of the necking type in achieving a lower electrical resistance through resistance measurement. The reduction capability of the base resin material was effective for the coalescence and the wetting of the **fusible** fillers and affected the conductive path type. A good metallurgical connection was formed between the **fusible** fillers in ICAs and between the **fusible** fillers and the copper surface even at the lower filler–volume fraction of 30%.

Availability

INIST–15479, 354000122655270140

Accession Number

2005-0065873 PASCAL

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Classification Code

001B60H45G; Physics; Condensed matter physics, Materials science; Surfaces, Interfaces, Films
001D03F17; Applied sciences; Electronics; Microelectronics, Solid state devices; Microtechnology, Materials science

Classification Code (French)

001B60H45G; Physique; Physique de l'etat condense, Science des materiaux; Surfaces, Interfaces, Films
001D03F17; Sciences appliquees; Electronique; Microelectronique, Dispositifs a l'etat solide; Microtechnologie, Science des materiaux

Classification Code (Spanish)

001B60H45G; Fisica; Fisica del estado condensado, Ciencia de los materiales; Superficies, Interfases, Peliculas
001D03F17; Ciencias aplicadas; Electronica; Microelectronica, Dispositivos en el estado solido; Microtecnologia, Ciencia de los materiales

Controlled Indexing

Experimental study; Adhesives; Fillers; Interconnections; Curing; Differential scanning calorimetry; Coalescence; Wetting; Formulation; Electrical conductivity; Morphology; Flip chip bonding; Fuses; Polymers; Resins; Soldered joints; Tin alloys; Indium alloys

Controlled Term (in French)

Etude experimentale; Adhesif; Matiere charge; Interconnexion; Traitement(durcissement); Calorimetrie differentielle balayage; Coalescence; Mouillage; Formulation; Conductivite electrique; Morphologie; Connexion par billes; Fusible; Polymere; Resine; Assemblage brasage tendre; Etain alliage; Indium alliage; Alliage InSn; In Sn; 6808B; 8540L

Controlled Term (in Spanish)

Formulacion; Conexion espesada

Physics and Astronomy Code

6808B; 8540L

Broader Indexing

Inorganic compounds; Organic compounds

Broader Term (in French)

Compose mineral; Compose organique

Session Cost: $15.71